

# AVIATION WEEK

JULY 28, 1947

INCORPORATING AVIATION AND AVIATION NEWS

A MCGRAW-HILL PUBLICATION



## In the interest of progress

To encourage public interest in the development of light aircraft, to promote progress in their engineering and to stimulate research in new designs, the

Goodyear Trophy Race with \$25,000 in prizes is being inaugurated at the National Air Races in Cleveland on August 30, 31 and September 1.

Goodyear, Aviation Products Division, Akron 16, Ohio; Los Angeles 54, California  
MORE AIRCRAFT LAND ON GOODYEAR TIRES THAN ON ANY OTHER KIND



THE *New* HONEYWELL ELECTRONIC

# Fuel Gage



## THE TANK UNIT . . .

The tank unit is the fuel measuring part of the system. It contains assembly of three concentric tubes, rigidly fastened together but electrically isolated from each other. The inner tube serves as a support and protecting shield for the other two, which form the two plates of a condenser. A flange is provided at one end of the assembly for mounting the unit to the tank. The rugged construction of this unit and the absence of any starting parts or electronic components eliminate the necessity for any servicing beyond an occasional inspection.

## THE POWER UNIT



Aside from the condenser and the indicator, all electrical components are contained in the power unit which consists of an amplifier and a calibration unit mounted on a printed circuit. (The mounting rack is not required if a suitable shell or rack is provided in the airplane.) The amplifier may be easily detached from the calibration unit for inspection, repair, or replacement without disturbing calibration of the system. Adjustments for both zero and full calibrations are provided on the calibration unit. Full calibration is easily accomplished in the time of assembly by merely connecting a standard condenser between two terminals in the calibration unit. This connection method eliminates the necessity for filling the tanks and jacking up the wings to calibrate each installation.

## THE INDICATOR



The indicator, which is designed for instrument panel mounting in a 2 1/2 inch opening, requires fuel quantity in gallons at 77 degrees F. The unit is powered by a single transistor motor which positions the pointer and the fuel-reading potentiometer through a 77-degree gear train. This speed reduction prevents the indicator from responding to momentary surges and splashing of the fuel in the tank. For the indicator operates fast enough to follow any normal change in fuel level and is so insensitive it requires changes in fuel as little as 0.1 inch. The scale on the indicator dial is 7 1/2 inches long and occupies five-eighths of the dial circumference. (The scale may be calibrated in pounds instead of gallons if desired.)

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**Honeywell**  
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CREATIVE ENGINEERING  
Makers of the famous Electronic  
Astrak, checked on all AAF  
Approved Symbols.



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**3**  
**TYPES...  
EACH BEST  
FOR CERTAIN  
ASSEMBLIES**

Just as you have a favorite wrench that is "tops" for a certain job, each one of these chemical tools is "tops" for a particular type of assembly.

**FORM-A-GASKET No. 1** (a paste) sets fast but not too fast for use on large surfaces. It dries hard but does not become brittle. It's a swell product for making pressure-tight, leak-proof unions . . . even when the surfaces are warped.

**FORM-A-GASKET No. 2** (a paste) sets slower than No. 1. It dries to a tough, pliable layer with plenty of "cushion". It resists high pressures, continual vibrations and disassembles very easily.

**AVIATION FORM-A-GASKET No. 3** (a brushable, self-levelling liquid) sets into position and dries to a tacky paste. It will not run, even when heated to 400° F., nor will it become hard or brittle down to 70° F. below.

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### The new Sperry H-3 Gyro-Horizon...

This small-size electric light instrument provides the same accurate indication that has been universally accepted. In addition, the Model H-3 has increased gyro sensitivity to aid the pilot in maintaining precise attitude control under conditions of poor visibility or "blind flying."



### ...paired with the new Sperry C-2 Gyroscopic Compass...

This dependable new rate of the Gyro-Horizon is the pilot's guide. In synchronism with the earth's magnetic field it gives continuously accurate directional indications under all conditions of air turbulence. Equipped with either rotating dial or pointer indicator.



### ...can be grouped for pilot's convenience

These new Sperry light instruments adjust readily to modern instrument grouping, have no light limitations, are non-heating, need no caging devices. Designed for standard 3 1/2 inch panel cut-outs, wholly electric D.C., free of brushes. Simple, compact, lightweight, precision-built.

AND IN THE MARINE FIELD, Sperry Gyro Compass is paired with Sperry Gyro-Pilot to set a ship on the compass, ahead of time, then steer automatically.

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## THE AVIATION WEEK

**EVERYBODY IS IN THE ACT**—It looks like 1934 again, when aviation was caught in a trisec space between political factions. Once again aircraft manufacturing and air transport are in the combat, innocent bystanders with everything to lose.

Ready between the White House and Capitol Hill is winged better. Aviation's great ability to draw the head lines makes it the prey of publicity seekers with political motives. Chinas was Truman's appointment of a commission of well known citizens to deliberate and recommend long-range aviation policies. The group was announced while Congress was still considering bills for a national air policy board.

The White House is trying to beat Congress to the punch on aviation issues.

The same conflict is apparent in improving air safety. Investigator Delan of the Brewster Committee beat CAB to the draw with his report Missing the LaGuardia accident on pilot error. CAB's report late last week was up before the Board for signature.

Meanwhile, the President's Air Safety Board jumped the gun on both Senate and CAB by urging revisions in the transport regulations.

**STRONG IMPORTANCE**—Both the President's Safety Board and the new Air Policy Commission will work at top speed to take advantage of the Congressional action. So will Senator Brewster. This is why Chairman Landon omitted request of his fellow members on the Truman board for summer adjournment.

For about six months, the Air Coordinating Committee through its industry advisory panel, has been working on a new national aviation policy statement. Among other things, it stresses importance of U. S. aid in developing transport aircraft.

Meanwhile, Congress was shadow-boxing with an act for a board. Concurrently, Truman began taking a deeper interest in air safety and aviation economics. It appears that CAB chairman Landon was an active adviser. One result was appointment of the special safety board.

That left the matter of economics. The spotlight next swung to ACC, and a letter June 16 to Truman from ACC co-chairman Garrison Norton, of the State Department, discussing problems of the aircraft manufacturers in relation to national security. Norton asked the President to appoint a board.

Meanwhile, a House Bill paired favor recently giving ACC statutory authority. A Senate Bill called for a temporary board with congressmen, industry and government officials as members.

When it appeared that agreement on the Senate version was certain, Sen. Brewster went to the White House. The President made no objection to a group

organized by Congress but told Brewster he thought a survey by an independent commission would be valuable too.

At the eleventh hour, Congressional action took the form of a joint Senate-House committee. Thus, two commissions will be at work on the same problem during the next few months.

Everyone in aviation prays for economic stability and public safety. The more experts who devote their skill to these ends the better. But at this point friction between the two groups appear inevitable and unwise.

### HOW BIG A ROLE WILL POLITICS DEMAND?

One thing does appear clear: that over James M. Landon, co-chairman of the Truman safety commission, will work closely with the new Truman air policy committee. In that dual role he becomes the most important man in commercial aviation, the spearhead of the White House campaign. Inevitably say he won't resign until he has seen the year through, means network standing.

**LIGHTPLANES KEEP SLUMPING**—Summer slump in lightplane sales has continued through July. Manufacturers' shipment figures may drop below those for June. Actually, summer demand is nothing new. Major acts have always been recorded in the spring. Look at your personal sales records for proof. Customer interest always slackens in good flying season and gains the halfway point.

Both Republic and Waco denied West Coast rumors that Maroon was leaving Republic to join Waco to take over the Seibles. Waco's Aviatron IV was abandoned recently. Seiber is out of production during vacation period.

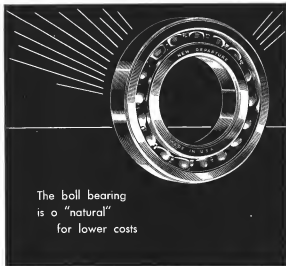
**ATLANTIC BUSINESS SLIPS**—Meanwhile, trans-Atlantic competition gets hotter. U. S. flag carriers who reported recently that they were booked up till fall are suddenly beating the bushes for business.

Overall traffic has dropped. Nobody knows exactly why. Maybe inexperience makes it impossible to plot busy seasons. Drop-off isn't due to airlines.

Foreign lines are capitalizing heavily on "Old World country and culture." Some are using new luxurious American aircraft than our lines. With fares fixed on an international basis, we can't cut rates.

So our brethren across the sea are making up in fields and custom comfort for what they lack in operating efficiency. U. S. airline men say the Scandinavians, Dutch and British, in that order, are doing the best operation and maintenance. The Belgians (SABENA) and French (Air France) are probably the worst. But the American public doesn't require too much about technicalities which are not mentioned in the ads.





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AVIATION WEEK, July 26, 1947

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# AVIATION WEEK

JULY 26, 1947

INCORPORATING AVIATION AND AVIATION NEWS

## Truman Board, Congress Group Will Probe Aviation Industry

Rival investigations aimed at formulating new U.S. air policy; have Jan. 1 deadlines.

A separate Presidential Air Policy Commission began preliminary organization of last last week, leaving to the joint Congressional representatives of the Air Policy Board and leaving the industry which has long wrangled with a group wondering if it is to be brought in the middle of a political fight.

The President appointed his first temporary body to make an inquiry into aviation policies and problems just at the time when it appeared Congress was on the point of reaching a law establishing a 13 members board to perform apparently the same function. "The aircraft industry had supported the bill in the House (Kilgus) and in the Senate (Barnes)" said the President gave no indication he was not in favor of the legislation.

► **Congressional Board**—The Congressional board would have been appointed by the President and composed of members of Congress and of industry, with a deadline of Jan. 1, 1948 for its report. The President's group consists of six government men, only one of whom has an aviation background, and must also report by Jan. 1.

Following appointment of the President's Commission, members of House and Senate Interstate and Foreign Commerce Committee last week announced efforts to organize action on the Air Policy Board, and instead pushed through a resolution to set up a joint committee to study aviation during the Congressional session. This would be called the Transoceanic Congressional Aviation Policy Board and be composed of five Senators and five Representatives.

The Center was determined also in the fact that Sen. Owen Brewster, at the time, transoceanic committee of the two houses that was handling the air policy bill, attempted to get the chosen instrument one involved in the scope of the board's study.

► **Joint Board**—Vice-President, sent as special members of Congress and a joint board set up by the Presidential Commission. They have two major objectives, one, the transoceanic is composed of men with little or no knowledge of aviation two, it has no Congressional representation (leaving the always in the long, those two points are considered as maintaining the Commission's chief value by those within

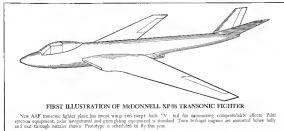
second in having said its establishment.

Between the Congress in Republican, and the executive branch Democratic, that struggle reflects political thinking. The house, the aircraft industry the rule of establishing data for two different groups that may, as may not, follow the same approach to the problem. Under such circumstances, industry representatives believe it would be very easy to afford unwittingly either the Congressional, or the Presidential inquiry.

► **Nathan's Suggestion**—The President early brief his commission of the suggestion of Cassius M. Norton, acting for the Air Coordinating Committee of which he is chairman. CAB Chairman James M. London, the other ACC chairman, is an aviator to support wholeheartedly the Commission plan, but left it to Norton to push in view of London's busy current status in CAB and the speed air safety laws.

ACC has felt for some time that an independent survey of the entire aviation situation is needed. It could not see when the aircraft could be done from an investigation by a board composed of men from Congress and of the government departments handling aviation. The board proposed by Congress would have been composed of agency heads.

According to Norton, who also is an Assistant Secretary of State, ACC has been able to bring together all dealing in aviation in the various executive departments and coordinate that with Congressional



FIRST ILLUSTRATION OF McDONNELL XP-66 TRANSONIC FIGHTER

New AAF transonic fighter plane has swept wing and swept back tail for increasing compressible effects. First special equipment, radar antenna, are mounted in fuselage. Two rocket engines are mounted below belly and out through nozzle doors. Prototype is scheduled to fly this year.

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HEADLINE NEWS

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handling of aviation matters. This could be what he termed aviation policy on one level.

■ **Walt Scudery-Bell**—The President of the President's Commission is the man to have this government policy on aviation selected to the cabinet among all men who support a sane general policy. Scudery-Bell, 50, is a New York attorney, former special agent in Security of State, specialist in international and corporate law, and as far as several books on corporate management and leadership.

■ **George F. Baker**, vice chairman, new general of transportation at Harvard University. A former Vice Chairman of CAA (1942), he was a colonel in World War II, and is 45 years old.

■ **E. Palmer Hays**, *Wayland Publishers* at the Deane Press, for many years with the *Fortune* magazine and during the war the deputy director of the Office of War Information.

■ **Henry Paul H. Detroit**, the *Wayland* president of Paul Hays Co. who is a two year in the job of one of the largest railroad reports has completely reorganized the company and strengthened its corporate position.

■ **Arthur B. Wainman**, New York, at 64 the oldest member of the Commission. President of Day & Stribner, he is an authority on finance and credit.

To these men, AGC will submit its newly formed as policy statement, which has been drafted by a subcommittee and was expected to be approved by the full group last week. It will also give to the commission, ideas, such as the *Standard* Division, which means of the 1945 Report as the *Standard* Industry. These will furnish the working tools of the Commission.

Chambers Fletcher last week told *Aviation Week* that, while it was still too early to say whether a defense plan—especially as he had not yet said the other members of the group—the expected that the commission would appoint an assistant director or secretary, and have reports for each plan as production, transport and legal. He would prefer personally that the executive director be in contact with the government.

■ **Headquarters Set**—Under the terms of the President's appointment the Department of Commerce will furnish leadership and staff assistance, but Fletcher already has an office in the Commerce building. He was to meet with Baker and Wainman at Washington last week.

As an indication of the possible value of the Commission's work, Fletcher stated he was examining the records of the Federal Aviation Commission of 1934. This was the first one ever established by Congress and appointed by the President after the commission of the air mail contracts

discussed by Clark Howell, Adams, Galt, and with the Board of War Production, it carefully examined every aspect of aviation and reported back to Congress with 100 specific recommendations—most of which were even followed.

## Senate Group Will Probe Hughes' Deals

The Senate's War Investigating Committee, headed by Sen. Owen Brewster (R, Me.), will begin its post-employment activity with hearings on government contracts with Henry J. Hughes and Howard Hughes in connection with the Kaiser Hughes flying boat and the Hughes reconnaissance plane, scheduled to start July 25.

The Hughes aeroplane has been assigned to a reconnaissance plane by Sen. William Fugate (R, Me.), which, at a scheduled, will aim to ascertain what, if any, political pressure was brought to bear through Elliott Roosevelt in the handling of the aerial government contract of 312 million in the Kaiser Hughes flying boat and what, if any, political forces were involved upon Hughes in the development of his D-1, D-2, and F-11 reconnaissance planes.

■ **Finance Involved**—President Truman is set at the proceedings as Chairman of the Senate Committee which in 1945 attacked Kaiser's handling of the deal involving public support for the post-war flying boat project. Kaiser later obtained the \$16 million from the Reconstruction Finance Corporation for the project, despite the opposition of the Army Air Force and the Navy.

Last week, the Senate's Investigative Committee, which already had its investigation of Kaiser's flying boat in Southern California, issued a subpoena on the estate of the late President Roosevelt, requesting the following:

(1) Memorandum, dated July 7, 1942, from the late President Roosevelt to Eli Galt, Jr. and Alford, together with an original note written in longhand dated June 23, 1942, attached to the memorandum and concerning Mr. Hughes.

(2) Memorandum, dated July 8 and July 25, 1942, from Eli Galt, Jr. and Alford to the late President Roosevelt concerning the Hughes flying boat project.

(3) All correspondence between the late President and members of his family and the White House staff relating to Hughes, the HK-1 flying boat, or the Hughes flying boat project.

(4) All correspondence between the late President, members of his family, or the White House staff and officials at the RFD, the War Production Board, War Department or other government agency, relating to the Hughes flying boat.

(5) All correspondence between the late President, members of his family, or the White House staff and an accounting firm

## Superforts Planning Precision Arrivals

Cracking of an emergency bomb loss at a precise point-to-point time after a 7,000-mile flight is the challenge to eight Boeing B-29 Superfortresses tonight night crew in a precision, Tokyo-to-Washington, D.C. flight in part of the warwide Air Force Day celebration.

Chief mission of the flight will be when the formation passes between Washington Monument and Lincoln Memorial in Washington, D.C. precisely at noon July 3.

The flight is scheduled to leave Tokyo at 1:30 A.M. EDT July 3 and to land at Elmendorf Field, Anchorage, Alaska 15 to 45 miles and 1,315 miles later. A maximum of three bombs will be allowed for refueling and the 3,500-mile trip to Andrews Field, Maryland, AAF Strategic Air Command headquarters, will require 15 to 16 days.

Comprising a 23-man crew, including spare pilots and engineers to relieve duty crew is required, each of the B-29's will fly at least about 44 miles apart until they reach the Mustangs (W. V.) where they will meet a 10th Air Force plane for the flight over Washington. The flight is a modern transfer of the war, which has been standard AAFAC practice for nearly a year. Monthly rotation of 3 to 20 crews in Tokyo has provided thousands of hours of Tokyo-Alaska training time for planes and crew and the 7,000-mile flight will introduce only new elements—precision of flight—into the operating techniques now employed.

## Fleet Suspends Personal Plane Production Program

Rehearsing of constant demand for personal planes in Canada as well as in the U. S. is indicated by decision of Fleet Manufacturing & Aircraft Ltd., in response production of the Fleet Oriskany high-wing two-place monoplane, at the Fleet line, Downs plant (Solenus) will be made out of inventory already on hand, with production suspension depending on when the stocks are exhausted and the demand, Thomas V. Smith, managing director, is reported.

At peak production last year the plant required approximately 600. This spring approximately 250 are expected and the number has been shrunk to 175. Smith and the workers in operation has been replaced by subcontract work for other companies.

Shareholders of Fleet Aircraft Ltd., which sold its assets to Fleet Manufacturing & Aircraft, Ltd. last August, are considering liquidating the parent company and its rendering in charter at a special meeting to be called soon.

## Mooney Prototype Has Fast Climb

Recent flight tests show engineering development of the prototype Mooney M-111 single seater has raised the rate of climb to 500 ft./min. although the 140-hp Continental engine, which powers the plane is only rated at 35 hp.

President Al W. Mooney, of Mooney Aircraft Co., Wichita, says the engine has produced as much as 35 hp and he expects to get between 25 and 30 hp in a production plane with suitable propeller. First aerodynamic test results show that power from engine to propeller at a 2.05 reduction ratio from the engine's 140-hp rpm engine, plus accessories weighs 85 lb. (See cover photo.)

■ **Flight Tests**—In flight tests at Wichita municipal airport plane reportedly has flown to 15,000 ft. ceiling, later it is expected to reach 15,000 ft. M-111 cruises at 70 mph, with fuel consumption of only 18 gph to meet 90-sec. problem. Top speed is reported over 100 mph.

In an effort to hold down experimental costs prototype is composite construction, using wood and fabric in wing and metal nose, and plywood 3/4 of cockpit is fuselage and tail. Mooney now plans to build a "prototype quantity" of M-111s at a plant near the Coors Wichita plant, beginning in August. These will be pilot models, but not by dealers and distributors, before full production begins.

■ **New Market**—A huge new market of available funds, which has attracted today's general public plans after prospects for the Mooney plane, which "cost will be under \$1,500," the president says. Test model does not have starter as available. Production model will have starter and possibly a carburetor, hand starter, but will not be electric starter.

Other engines have tried previously to use automatic engine in light planes, but have abandoned the effort after months, partly because Mooney's initial proposal, his engine has already made 110 hp. test block run with only one carburetor in place.

If the present plan is successful in quantity, says the used aircraft may be followed by other manufacturers.

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FOUR BELTS Drive Propeller



\$1,500 OR LESS for Mooney Single-engine



LINCS RESEMBLE Cadet Target Plane



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## Manufacturing Status Improving In Face of Deficit Reports

Long range position seen bettered by move to establish air policy as Congress up procurement appropriations.

While aircraft manufacturers eagerly continue to reflect deficit operations, there is increasing evidence of definite improvement in the industry's fundamental position and long range outlook.

A constructive government attitude appears in the making with anticipated approval of the Brewster bill to establish a national air policy board. Congress has shown a definite change of heart toward both Army and Navy, as is evidenced by the most optimistic air aircraft appropriations voted by the Senate.

This apparent reversal in the trend of official attitude toward the aircraft industry is vital to the industry's ultimate survival, for the industry is almost completely dependent on military orders; hence it can hardly meet on commercial bases.

► **Editorial Editor Building**—A survey shows that the aircraft manufacturers now can anticipate an appreciable military backlog of orders in addition to business operations up to June 30, 1945. A little less than one-fourth will be expended on research projects. This volume should be available regardless of the trend of general business conditions.

What happens to a company heavily engaged in production of non-military items partly is revealed by the recent report of Douglas Aircraft Co. For the six months ended May 31, the company showed a net operating profit of \$6,712,597. After applying a carry-over credit of \$4,862,000, the loss was reduced to \$173,207. This is in contrast to the net income of \$2,650,251 claimed in the corresponding six months of last year. An unexpected production rate of 21 DC-6s was reached in the annual program. All told, 48 DC-6s were delivered up to July 3. The rapid growth of deliveries of this new transport type has led to a particularly high position of the aircraft and development engineer. Such rapid type input demands with such accelerating delivery of aircraft.

Evidently it is Douglas policy to anticipate all such development expense as rapidly as possible. This arrangement results in an increasing loss on current plane deliveries to be replaced by profits at the end of the year. Nevertheless, the company anticipates that the cumulative losses for the five or six years will be somewhat reduced during the last half of the year.

This is a very conservative accounting policy and is contrast to that followed by

other builders who estimate development and engineering expense suddenly over a given production program.

► **Bank Loans**—To assist in meeting long-term requirements, Douglas borrowed \$50 million under its bank credit arrangement. At the end of May, net working capital amounted to \$16,511,147, the bulk of which—\$47,528,934—was accounted for by inventories and work-in-process. A year earlier, inventory position totaled \$18,125,371 and last year previous had \$5,074,331.

The huge inventory position accounted for by commercial production is highlighted by the comparative sales in recent years. For the six months ended May 31, 1945, total sales of \$415,845,000 were achieved—moderately less than two years later, sales of about one-third that amount required to maintain production rates later in large.

In Douglas income statement of the DC-6, its inventory position will be reflected in its cash balance instead, thus pointing to an early retirement of the load order.

Unfilled orders for Douglas at May 31, 1945 amounted to \$165,039,600 compared with \$180,518,000 at the end of the first year. About half of the current backlog is represented by military orders, including research projects.

The Douglas engineers have outlined the new of many industrial operations that will meet the demand during the war, most aircraft companies are capable of operating profitably on commercial business alone.

► **Policy Needed**—However, the emphasis on the air needs—however, is that the industry suffer from more of a long range planning program. It is a fact that such an investment is being regarded by the public as a long-range investment of a national air policy board.

The Douglas bill would create a board which would investigate and make recommendations for the maintenance of an adequate aircraft manufacturing industry, having other things, it would be expected that government purchasing policy would be measurably clarified, and stability introduced. Such a policy, which would prevent the aircraft builder to operate at a reasonable profit level.

► **Control Subsidy**—One of the largest air objectives would be to ensure production levels. The strategic spending of contracts

has had very detrimental effects on the industry. In order to obtain any military orders, the aircraft builder has had to sustain an expensive engineering department, whether or not it was fully occupied.

Of greater cost significance is the problem of financing new aircraft designs. The development of new aircraft models entails the expenditure of substantial sums, with major projects only running as high as \$50 million. Such development expense can hardly be borne by the industry in looking for the early commercial market.

Development contracts are again being let on a cost-plus basis for loss. Though there is no custom profit experience it is believed that earnings on such projects average about 7% on sales. Regular production contracts are generally for a fixed price basis and carry a higher profit margin.

The scramble for commercial business has been very costly for the aircraft builders. Lockheed, Douglas, Boeing, Grumman and Martin have all had a very difficult time in developing new commercial transports and attempting to show a profit on their production. It is true, however, that the bulk of such development expense may have been absorbed by earnings realized during the war period. Nevertheless, no builder has as yet showed a profit on his commercial model.

Further, while Douglas and Lockheed have passed through that initial painful period of introducing a new transport, the other builders have yet to go through the trials of receiving an approved type certificate from the CAA and to eliminate all the engineering "bugs" that are inevitable in a new plane. All this prevents is to costly and time-consuming work on standard, heavy commitment in investment. Moreover, in the light of current air-line traffic trends, it appears that the market for new transports may have been greatly overestimated and may require a longer period in which new transports can be sold.

► **Need For Military Orders**—The industry's background and very nature of operations clearly place it squarely on the military side of aircraft production. Assuming the situation as it is viewed on policy level, it will nevertheless take considerable time for the agency to function as an economic stimulus. It is reasonable to expect, however, that this broad world economic cooperative program and would work a very important over present position being followed.

In the process, a sufficient volume of business to assure stable operations would be anticipated. By an increase of the employment level and long volume orders are necessary to secure profitable results. For the most part, the aircraft industry has no fixed charges to support and asset properties and facilities are largely uncommitted, thus keeping current operations changes to a minimum at season. Over the volume of business at an industrial rate, it is in addition and operational schedules can be adjusted to reduce any excessive pressures to a minimum while the resultant demand is sustained through.



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SPECIAL ALLOYS, POWDER METALS**

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## TEMCO Seen as Major Factor In Personal Plane Field

**Takes over bankrupt Globe's Swift after producing 300 under contract.**

With other business slowly picking up, aircraft and tooling companies slowly getting out of the aircraft production slump, Temco Engineering & Manufacturing Co., has the potential, at least, of becoming a major factor in the personal aircraft industry.

The Dallas concern already has emerged full force in the lightplane industry. Its acquisition of the Swift from bankrupt Globe Aircraft Corp. brought it a product already on the market, and the company has the tooling and experience to produce it. It has a \$5,000,000 annual volume and will be making the Swift into being 1,000-2,000 in a six-month period, and 2,000 airplanes.

TEMCO began TEMCO's attempt, and possibly chief hope of becoming a strong competitor in the lightplane field, in the business it had before it took over the Swift. It was formed about 18 months ago, shortly after VI day, out of the combination of two concerns. Its president, Robert McGillich, vice president H. L. "Bert" Howard, and about 90 percent of the other employees worked for North American Aviation, Inc. in the same plant that the company now occupies. McGillich was general manager and Howard was president of NAA's Dallas division. TEMCO began as a product of concern, that such products under contract, and this is still an important situation. It built several modified Fairchild F-24 under contract, and entered the overall and commercial business, which is a suitable part of its operations. Of the more than 1,000 Swifts shipped by Globe, TEMCO built more than 300, again under contract. In fact, one of the major producers of the lightplane was in the past more than \$1,000, to \$1,750 for the deluxe and \$1,250 for the standard version.

Swift began Howard picked up the Swift of the lightplane market, and its heavy development program to be changed all against the airplane's selling point. TEMCO has a greater latitude in pricing than is generally true in the lightplane field. The company has received more than \$2 C-40 for various, and is a Douglas-licensed maintenance and overhaul center for C-54. It has convenience work for TWA, Western Air Lines, Philippine Airlines and

Aerovias de Colombia. It is a major part of the Aerovias Republica program, under which the U. S. is establishing the airlines of Latin American countries.

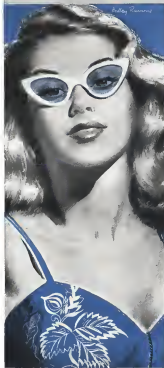
► Outlook: Continued — For the ATP.



TEMCO'S BREAD AND BUTTER—Temco Engineering & Manufacturing Co.'s position in the lightplane field is strengthened by having an established customer base which means part of its overhead. Example of its work is shown in this photo of the club membership of a C-40 converted in a personal transport for the president of a South American country.



NEW LIGHTPLANE MANUFACTURERS—Robert McGillich, left, and H. L. "Bert" Howard, president and vice president, respectively, of Temco Engineering & Manufacturing Co. which enters the lightplane field with the acquisition of the Swift from bankrupt Globe Aircraft Corp.



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A. Brown glass wing protects the conductors of Neolay Aircraft Wire—making them resistant to heat and flame.

This is one of the reasons why this new aircraft wire has proved so successful under the most rigorous conditions of aircraft operation. But Neolay is also resistant to moisture and to the effects of oil, gasoline, alcohol, diesel and salt water.

Because Neolay is resistant to moisture and lighter in weight than ordinary aircraft wire, it is easier to handle and install. It is compatible with either copper or aluminum conductors. Next to the conductor is an insulation of higher electrical and physical properties. Over all, but removable from the insulation, is a smooth nylon cover, which facilitates handling and permits quick identification.

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## Northrop Preparing Pioneer for Tests

Northrop Aircraft, Inc., now making structural modifications of the prototype of its P-1000, now being completed, will have the plane ready for static demonstration tests within the next few weeks.

Prototype modifications will be more extensive of the tail surfaces from present "loaded" skin, externally stiffened, to stressed-mono-film structure with internal skin-ribs-replacement of present solid-type ribs by conventional "airfoil" type. Displacement by 4.75 sq. ft. of the plane's wing tip "booster" section. The latter change was ordered to give control sensitivity help primarily at low loading speeds.

If the P-1000 goes into commercial production a further structural change will be made in the central fuselage area changing the present cylindrical cross section to a modified rectangular one. It gives more floor space and greater seating capacity as a requirement. Northrop engineers consider that this modification will not alter the airplane's aerodynamic characteristics and will not be necessary in prototype design because changes made during development made a modification of a wing rib on the elevator to lighten control forces.

John W. Myers, Northrop vice president in charge of sales, said the tail modifications are required because Northrop engineering studies had indicated that the smooth skin structure will have lower maintenance and repair costs. No changes are being made in the major structural components of the wing.

## Props Here to Stay?

The propeller will remain the dominant element of transmitting propulsive power. In a recent of the future low altitudes and high speeds conducted it equals below that of usual. Such is the position of them (the Standard Co. of United Aircraft Corp. is quoted in the low cost, emergency production.

Below the speed of sound propellers can be made more efficient than jets or rockets, and propellers, possibly supported by jets, will power all jet-propelled and all cargo-carrying flights for years to come. This is true also of low-speed balloons.

The conventional propeller is adaptable for use both with piston-driven engines and jet turbines. A jet turbine driving a propeller retains all the propulsive advantage of efficiency over the jet and rocket and benefits at the same time by its simplicity and lower weight advantage over piston-driven power into the article outside.

## Industry Observer

▶ Chance Vought's new fighter the XP8U-8 will be a taller, straight-wing version of the P-80 (XP8U-1). Vought did not want to build wings.

▶ Ernie De Havilland design still is now concentrated on development of the DH 106, a high speed transport powered by four Glanz turbines. When Glanz turbine is ready the development of the DH 106 is when Ernie De Havilland was killed last year.

▶ Shell Oil is developing a 130 octane aviation fuel that will be suitable for operation in weather as low as 50 degrees below zero.

▶ De Havilland has a \$16,600,000 backlog of orders on the Dove 8 to 12 passenger transport and \$12,000,000 on Royal Navy orders for new versions of the Harrier and Mustang. Production rate on the Dove is now two per week with deliveries scheduled by some production on Cape Queen airport has not yet caught up with airplane production.

▶ First flight tests on the Perkin-Elmer functioner indicated that no much has been added to the design weight that the payload was constant of "vertical" messages. Plans will be released in an effort to recover the lost payload.

▶ Stanley (Haw), a Chicago, is planning a September test flight on a new commercial helicopter that will be a four-seater, four-engine, 1000 hp. The new "Haw" will have a single seat with a new seven-passenger model assembly. Four models are now under construction.

▶ General has abandoned the design Model 249 for its new transport and lander will play it at the Canadian. First NX model was originally scheduled for delivery to American Airlines but will be cancelled by the company to spend CAA financing that Western will get the last NC plane.

▶ ATA president C. L. Ladd said that the United States Government spent \$1,000,000 on the search for Amelia Earhart in the South Pacific.

▶ North American has launched a heavy campaign to add 1,000 production workers for a stripped up F4U. Navy program at its Highland plant and the AAF 3-4-5 project at the former Douglas plant, North plant.

▶ Southeast Airlines, West Coast division, probably will be the first to receive to combat service from the new Allison 35 D. Allison says that Southeast has added a demonstration unit and it is scheduled to place in order for 30 sets. Southeast has long been interested in practical application of a new engine as recommended in the (Beech) Report (Aviation Week, July 21).

▶ Sola Aircraft Co. has \$700,000 in new orders for C-54 transport and modified parts for Navy F4U-2 and other short-term requirements for the Allison model 400 transport engine.

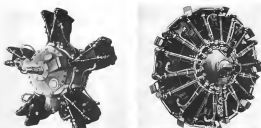
▶ Iraq Government is taking delivery on 10 British Hawker Fury fighters and four dual control fighter type trainers.

▶ Wright has reported a new transonic problem on high-speed fighters, "loading." This is a rapid deterioration of the surface of the wing, which is not enough to be classified as buffet. Loading must occur primarily because of the wing of the tail plane being right up on the wing. Cause is pressure flow over the aft edges of the XP8U-1. Tests and other similar high-speed fighters. Stalling goes down "back" at two major new problems in transonic stability and control.

▶ North American's XH-41 motor above a major problem presented in structural failure test on installing a transport engine along the wing short but, motor efficiency. However, the engine has been below the wing, but structural cannot. AFA engineers located the engine high in the middle of line with the wing chord, thereby reducing the engine moment by increasing its side loading drag.

▶ Sola production of House V. Potters's "Hippo-Copter" (Hippo) is under way with display of a rapid landing gear model at the World International Exposition in Los Angeles. R. W. Allen, Secretary of Hippo-Copter, Inc., said that tests have been made to complete development of what is expected to be a production unit, "Hippo 300." The first testing of the model has been limited to low level hovering flight when the ground surface. No transonic flight has been attempted. Estimated performance data for 95 mph forward speed and 15,000 ft. ceiling. The model weighs a 15 lb. two-cycle engine, rubber rotating control ratios of 14:1, and weighs 375 lb. fly. Power to rotor is applied through a 10 to 1 gear box. The unit is expected to sell for under \$1000.

▶ Free airline action today of Boeing's "Stratolifter" is expected to coincide with the advent of the C-130 Hercules. An Air Transport Command's C-97 is being presented at Fordham (San Jose) to the flight to Hawaii last week. A flight with service of the 27th strider is because the strider shows a C-97 being over Golden Gate Bridge at San Francisco.



M41F, 145-HP radial developed from French Lorraine 57, powers trainers such as U-2 and UT-7, which have been in service since before World War II. Later versions of the M41 have not been used extensively.



M45, WITH TWO-SPEED supercharger is rated at 1,000-hp take-off. Developed from American Wright R-3500 Cyclone, it powers PS-54 (Russian built Douglas DC-3), GST (Russian built Cessna F43), and IL-2, shows here.

## Evaluating Russian Aircraft Engines

By PAUL H. WILKINSON,

Editor, Aircraft Engines of the World

**Genealogy and ratings of seven piston engines powering majority of Red Air Force trainers, fighters, bombers and transports.**

Though considerable information has filtered through the Iron Curtain on Russian aircraft, very little engineering data has been disclosed on those power plants. Now, however, it is possible to see what these Russian engines look like, and to compare them with those of other nations.

Russian aircraft engines now in production have all been developed from well proven power plants of American, French and German origin. They are of integral design, with simplicity emphasized in their construction details, work as the use of poppet valves and gear-driven superchargers.

Seven basic types of reciprocating engines are taking care of the needs of the Red Air Force, with two additional types under development. Regarding jet engines, it is doubtful whether many jet engines have reached usable production in Russia, but when they do, undoubtedly they will be copies of German or British designs.

►Trainer Tigen-In the standard engine field in Russia, the standard power plant is the M-1, a 5-cylinder radial of common French design developed some years ago from the French Lorraine 57 (pooled #8). Earlier models of the series work as the M1EE were rated at 110 hp, and the M11F now in production has a maximum output of 145 hp. These engines are used in primary training planes such as the UT-2 and the UT-7. Larger versions of the M-1, such as the 7-cylinder M-21 rated at 220 hp, and the 9-cylinder M-31 rated at 320 hp, using the same cylinder and parts, have been built but have not been extensively used.

The M45, the only 9-cylinder radial now in production, traces its development back through the M62 and the M25 to the American Wright R-3500 Cyclone. The M45 has a 2-speed supercharger and is rated at 1,100 take-off hp, while the M42 which preceded it at rated at 1,000 hp

These two engines are used in advanced training planes such as the IL-2, and in 2-engine transport planes such as the PS-54 (Douglas DC-3), and the IL-2 of similar design. The M42 is also used in 2-engine Soviet bombers such as the MB-6 (Douglas Dolphin) and the GST (Consolidated PBY Catalina).

The M52 is a relatively new 14-cylinder radial which reached the production stage toward the end of World War II as a counterpart to the German BMW 801. Developed from the American Wright R-2600 Cyclone and equipped with a 2-speed supercharger, the M52B7NW is rated at 1,350 hp at take-off, comparing quite favorably with the 1,700 hp output of its American prototype. This Russian engine has direct fuel injection using a 14-plunger level type metering pump of German Daimler design. Drive axles of the series such as the M52111 and the M52112 are equipped with downdraft carburetors.

# THE Swift IS HERE TO STAY!

A Statement by Texas Engineering & Manufacturing Co.  
... New Manufacturers of the Famous All-Metal Swift

THE FAMOUS SWIFT has been utilized over the world's for half a century, proven itself to be a complete advanced performance with exceptional ability and flying ease. Many pilots call the Swift the finest airplane in the two-place field. More than 1,200 Swifts now flying in North and South America, Africa and Europe have won international recognition for speed and economy performance. Texas Engineering & Manufacturing Co., Inc. is proud to announce the purchase of patent and manufacturing rights in the Swift from the Douglas Aircraft Corporation along with tools, new materials, supplies and subassemblies. Tomorrow's full records are now behind combined Swift production and assembly. We assure all Swift owners, dealers, and prospective customers that the Swift is in the field to stay.

## Financial Strength, Manufacturing Experience

Texas is one of the Southwest's major gateway industrial firms. Gross sales in 1944 totaled more than \$5,000,000.00 with more than \$4,000,000.00 gross income attributed for the current year. Texas

is credited by former associates of North American Aviation in 1,000,000 square feet of the former N.A.A. plant now Dallas. Almost 2,000 skilled workers are employed in the no combined plant and about 90% of them are experienced former North American Aviation employees. Texas's many different manufacturing activities help guarantee stability and security for both dealers and customers. Production of the Swift is not new to Texas, as 118 Swifts were produced in contract for Douglas Aircraft Corporation and 40% of the component parts for all Black Swifts were Texas-made.

**A CAA Certified Operation**—The Civil Aeronautics Administration has certified Texas as an aircraft manufacturer, assembler and modification plant. Contracts are now in the shop for the U. S. Army Air Force, and several domestic and foreign airlines. Fairchild, Alouette Co., and for aviation commercial products. Texas has plenty of plant and plenty of "know how" to build and aircraft quality into the new Swift.

## Swift Prices Go Down!

Now you can get your new Deluxe Swift for \$13,750, or the Standard Swift at \$12,250. Texas plans to build more by lowering prices in the Swift competition and by giving you the most complete new dollar.

Both models are ready for immediate delivery. How can we reduce prices now? More than \$1,000,000 were absorbed by the new standard Swifts Aircraft Corporation in developing the Swift to its greatest state of perfection. With these factory expenses already taken care of, Texas can produce the Swift at lower cost. These savings are passed along to you in the form of an even lower Swift at a lower price.

Two important improvements on the new Texas Swift are the Star drive Tail Wheel and (on the Deluxe only) a Metal Day Canopy.

## Service and Parts Are Available

Plenty of genuine Swift parts are in stock now. Parts and Service are offered through established dealers with factory service offered where dealer service is not available. Nation-wide Sales and Service organizations are now being set up. Write for the name of nearest Dealer.

The Swift is the only airplane in its class approved by the Federal Aviation Administration for a secondary pilot for D-1, light aircraft.

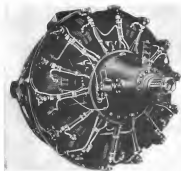


**To Swift Owners**—If you plan to register based on a Swift dealer to receive our Service Bulletin, and other valuable information, you are invited to write us immediately by Swift Service Department giving your name, address and the N. C. and manufacturers Serial Number of your Swift.

**TEXAS ENGINEERING & MANUFACTURING CO., Inc.**

P. O. BOX 8191A

DALLAS, TEXAS



**M52 FNW** at 1,930 hp, was developed from Wright R-2600 (illustrated), lightens, IL-4 and TU-4 bombers and TB-7 and



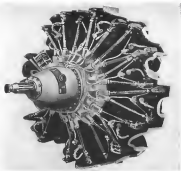
**M107A, WITH FOUR VALVES** per cylinder and exposed supercharging delivers 1,640 hp up to 1,690 ft. Used in YAK-7 and 51 fighters and often now in preference for Red Air Loco.



**Power LA-3 and YAK-7** engine families (topright)



**M101B, 14-CYLINDER** runs at 1,100 hp and is descendant of French Gnome-Rhône 14. Used in IL-6 as shown, and SU-7 twin engine bombers.



The M52FNW is used in some of the latest Russian fighters such as the LA-3 and 7 and the YAK-7. It is also used as turbo boosters on the Zivko IL-4 and TU-2, and the 4-engine TB-7 (PE-5). Transport planes powered with it include the Zivko IL-32, a large version of the IL-2 of Douglas DC-3 type.

► **French Ascent**—The M101 is a 16-cylinder model of French origin with its main top going back through the M-57, M-85 and M-89 to the Gnome-Rhône 14N. Rated at 1,300 hp at takeoff and equipped with a 2-speed supercharger and an exhaust air heater, the M101 is used in IL-4 (DB-1F) and the SU-7 twin engine bombers. A later model known as the M109 equipped with direct fuel injection and rated at 1,500 nhpshp by and 1,140 hp at 7970 ft, is

used in the most recent model of the SU-7 bomber. It also powers the new IL-35 4-engine transport which bears considerable resemblance to the Douglas DC-4.

An 18-cylinder standard radial results in the American Wright R-1050 in order of development for use in Russian types of the IL-2. It was equipped with direct fuel injection.

In the liquid-cooled engine field, too, we have concentrated most of its efforts on conventional 12-cylinder v-type powerplants based on French, American and German designs. Most interestingly and of this type is the 12-cylinder M-101, which can be found back through the new M-108 and M-110 in the French Hispano-Suiza 12V. Several models of the M-105 are in production. The M-105F and the

M-101FA are rated at 1,300 hp at takeoff and have provision for a mixture in their gas firing through the hollow propeller shaft. The M-101FF is similar to the M-101F but has a rating of 1,250 hp at 2,600 ft for low altitude operation in ground attack planes. The M-101FD is similar to the M-101F but has a 2-stage supercharger with hydraulic coupling and is rated at 1,015 hp at 23,000 ft. The supercharger equipment on the M-101FFD is similar to its 7-stage contribution on the Allison V-1710 E30 used in Bell P-51 fighters supplied in America by Russia during World War II. The M-105A is similar to the M-101F but has no provision for a mixture.

► **Fighters Required**—The M-101F with a 7 mm cannon is used in fighters such as

the LAGG-3 and the YAK-3, and the low-altitude M-105F is used in ground attack planes such as the YAK-16, the YAK-77 "bushmaster" equipped with a 37 mm cannon, and the 2-engine PE-2. This latter engine is also used in the YAK-78 advanced trainer. The M-101B, without cannon power the AK-1 (DB-1A), AK-2 and YAK-4 twin engine attack bombers.

A further development of the M-101 is to be found in the new M-107 engine which, although of the same displacement and basic design, is modified with a tilted power output of 1,650 hp, which is mounted in 3,600 ft. This is made possible by the use of four valves per cylinder in each of them, improved supercharging and other modifications inspired from the new Soviet Hispano-Suiza 12Z. The M-107A is

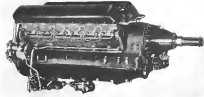
used in YAK-9D and YAK-11 fighters and in other new aircraft now in production for Red Air Force.

The AM-35A, liquid liquid-cooled piston model engine produced in Russia, were designed some 15 years ago in the American Curtiss Corporation and the German BMW V1 (also manufactured in Russia under the number M-17). Although the American and the German engines were of considerably smaller displacement, more of their latest features were included in the M-35—successors of the AM-35 and the AM-38—when it was redesigned at the Fiat Aero Shop in 1934. The AM-35A, rated at 1,600 hp and the AM-38F which has a maximum rating of 1,780 hp, still have low resistance between the cylinder blocks is originally used in the Curtiss Corporation

The AM-35A, a standard engine model, is rated at 1,550 nhpshp hp and 1,200 at 19,500 ft, using a single-stage supercharger having a ratio of 14.5:1. The AM-35A is used in fighters such as the MIG-3 and in 4-engine bombers such as the TB-7 (PE-5). The AM-35A powers the latest model of the IL-2 "Stuka" ground attack plane.

► **Direct Engine-Booster** Fuel engine under development is of particular interest as it is the most part of Russian design—and is a Diesel. Known as the M-40, this 12-cylinder straight six liquid cooled powerplant of 3,600 cc in displacement (with variable static production in 1941). The M-40F model is rated at 1,900 hp for takeoff and 1,210 hp at 19,700 ft.

**M-105F** is descendant of French Hispano-Suiza family. Delivers 1,100 hp at takeoff mounted in LAGG-3 and YAK-7 ground attack planes, with cannon firing through hollow propeller shaft. Also used in PE-2 transport line.



**AM-35, WITH TOP RATING** of 1,700 hp is reported most powerful liquid cooled engine now in production in Russia. Developed from Curtiss Corporation and BMW V-8 of piston M-11 (shown), latest IL-2 Stuka and TB-7. (Engine photo copyright 1947 by Paul H. Williams)



CHECK MY MAGS ?  
AW, DON'T BE SILLY—  
LAST TIME UP  
SHE FLEW LIKE A DILLY



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Neglecting preflight procedure is one sure way to keep your plane from growing old. A less hazardous method is the proper finishing of aircraft. Murphy formulations for finishing, refinishing, and maintenance are designed to help keep planes youthfully raring. You'll find them at airports and aviation shops the country over or write: Interchem Corporation, Finishes Division, 555 Fifth Avenue, New York 1, N. Y.

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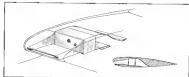


## Searching Drag Studies Check Speed Impeders

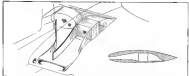
Part III

To determine unfavorable aerodynamic characteristics, exhaustive drag investigations on various military craft were conducted at the Langley field—wind tunnel of the National Advisory Committee for Aeronautics. Data obtained is presented here as the basis of sketches showing original in-

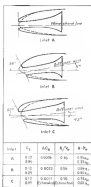
definiteness together with modifications studied, and a decrease of the zero profile of the rear made. Tests I and II, dealing cooling drag factors, appeared in May and June editions. We continue the analysis here with results obtained from investigations of slowing coefficients.



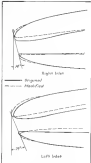
DRAG DECREASED WITH MODIFIED INLETS. General arrangement of original wing drag coefficient is seen above, and representative inlet shapes tested for craft. Air flows at right, top. Small sharply inlet (A) with inlet plane perpendicular to wing closed and deflector was profile to drag, showed lowest drag at low lift coefficient. At high lift coefficients, curved flow separated from lower by well reflected in pressure recovery area at deflector face. Point (B) was designed to obtain higher pressure recovery at high lift coefficients, but at low lift coefficients pressure recovery was less than for inlet (A) because separation occurred just inside upper lip. No separation occurred at high lift coefficients and pressure recovery was higher with inlet (B) than with (A). Drag of inlet (B) was highest of those tested. Composite inlet (C) was found most satisfactory in light of high pressure recovery and low drag for wide range of drag coefficient. When inlet lips are extended (C), drag should be reduced with drag equal to external shape. Hence no drag data were available for inlet (C) at  $Q/V_\infty = 0.56$ , wing movement shown was estimated from available data at  $Q/V_\infty = 0.78$ .



RESULTS ON OTHER CRAFT showed drag coefficient maximum of 0.0013 when axis were removed from wing short inlet and axis with exit flaps at 0 deg. for high speed conditions. Removal of axis from holes for inboard inlet axis as top of short axis added increment of 0.0004, giving total drag coefficient of 0.0017 for engine installation, with large quantity of air flowing through short because of leakage at exit flap. Tests with propeller spinning showed various losses in total pressure recovery in result of configuration of duct lips to airframe caused by depression adverse. To remedy condition, modified inlet represented by dash lines in sketch at right) were modified with plane of inlet on side or opposing propeller blade tilted 15 deg. further downward than plane of inlet on side of fuselage blade. Further modification consisting of narrow air duct at left and right inlet from 35 to 75 sq. in. was made to lower inlet velocity ratio. For high speed condition, with exit flaps at 0 deg., modified inlet decreased drag coefficient 0.0005 and increased total pressure 15% at lower  $Q/V_\infty$  ratios. Cooling was captured for both high speed and slack conditions with modified inlet.



$C_L$  - Lift coefficient  
 $C_{D_{inlet}}$  - Drag coefficient increment  
 $Q/V_\infty$  - Quantity ratio of flow, inlet per sec  
 $V_\infty$  - Free stream velocity ft/sec  
 $Q$  - Total pressure in per ft  
 $Q/V_\infty$  - Free stream velocity pressure 14.7 psi at sea level



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In all-metal aircraft construction, an extra wide sheet can often mean a saving in weight, a production economy, and a machine that is undeniably cleaner.

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FIRST IN  
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## Boeing Develops Baby Turbojet

150-lb. unit adaptable as auxiliary aircraft power plant or for surface use; companion turboprop seen available for advanced lightplane designs.

Boeing Aircraft Company has taken the wraps off its smallest turbojet powerplant project to date.

• A two-burner turbojet engine weighing 140 lb. and delivering 320 shaft horsepower with an added 50 lb. thrust from exhaust.

• A two-burner turboprop engine weighing 85 lb. and delivering 110 lb. static thrust.

These are the engines Aviation News requested to the aircraft industry five 15 and said would be "about the size of a portable sawing machine."

While Boeing engineers anticipate that the turbojet (Model 502) may easily revolutionize the general aviation engine market, and push airplane designers into developing potential light planes for high and fast business-powered flight, obviously the company is more conservative.

► Immediate Use—The company admits that the turbojet model "appears useful to be an ideal engine as a power source," but quickly cautions that probably more immediate use auxiliary power in light aircraft, light plane power, boat propulsion, automobile power, station or power plants.

For its smaller (Model 500) turbojet, Boeing says immediate use as a static engine for larger jet engines and as a propulsion unit for missiles, gliders, boats and small airplanes.

At Seattle's Shufeldt-Maxfield, Boeing

director of public relations, told Aviation News that because the engines still are under experimental testing no conclusive information can be given as their test capabilities.

To date the Model 500 prototype has had 100 hr. of running time while component testing has gone well over 1,000 hr. Although actual operating speed is 36,000 rpm, an engine design pattern have appeared during tests.

Meantime, the turbojet has a length of only 19 in. and a maximum diameter of 12 in. A 7.15 in. turbine wheel and centrifugal compressors are mounted in a common shaft. Burner temperature is given as 3,500 deg. F.

Only slightly larger is the Model 502 engine, which has a length of 41 in. but no more over the Model 500 as maximum diameter.

► Production Possibilities—While the two jet turbines are reported by Boeing officials to have been developed primarily as a static projects, in gas turbine power plant, knowledge of aircraft work, it now is quite apparent that the Seattle surface bomber was well known to engine manufacturers.

As might be expected, Boeing will look to the armed services for its initial engine market, and additional turbojet engines of the Model 500 design will be built as needed for military testing.



BOEING'S FLEAWEIGHT TURBOJET

Boeing Model 500 turbojet, which develops 110 lb. static thrust at weight of 85 lb. Can operate over, Model 501 turboprop, delivers 50 hp and 18 lb. thrust at weight of 140 lb. Both are by products of research done in first step in designing proposed aircraft and when studies of individual components had been completed, engineers decided to build actual units in further evaluation. One is said to find Boeing is now building additional experimental engines for military service. Model 500 is 19 in. long, 22 in. in max. diameter and has 7.15 in. turbine. Model 502, basically same engine except for additional burner to drive propeller shaft through gear box, is 40 in. long.

Consequently the military service might order the baby turbojet in more quantities as engine studies bring less weight and greater simplicity than design drawings on hand now is set to U. S. plane service turboprops.



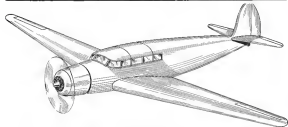
COMPRESSOR AND TURBINE of Boeing Aircraft Model 502 turbojet which develops 150 lb. static thrust at weight of 115 lb. Though reportedly built solely to gain research information, unit is now readily available as auxiliary power plant for light aircraft.



BOEING MODEL 501 TURBOPROP, delivering 50 hp and 18 lb. thrust with weight of just 140 lb. Recently evolved to Model 502, to maximum diameter is 22 in. Compressor turbine speed is both units is 36,000 rpm and burner temperature is reported at 3,500 deg.



## NEW AIRCRAFT



### Italians Diversify New Plane Types

Siai-Marchetti completing personal-charter prototype; running flight tests on four-engine 18-passenger-cargo liner.

Now under construction at July is the prototype Siai-Marchetti SM 101 (left's conception of which is shown above), an all-metal craft designed for charter or personal flying.

Of conventional low wing construction, it seats pilot and five passengers. Design gross weight is reported at approximately 4,100 lb., of which 1,900 is given to useful load. For short takeoffs, wing area is 327 sq. ft., with span set at 55 ft. 6 in., length 55 ft., and height 9 ft. 10 in.

Powered by a 215-hp Walter Bosu engine, cruising speed at 70% of power is expected to be 140 mph. If the goal of keeping fuel consumption to 38 lb. per hr. is achieved, the craft will use about 64 lb. per mi.

► **Four Engine Transport**—Currently undergoing test flights is the four engine Siai-Marchetti SM 45, (below) which appears to be a second development of previous Siai-Marchetti types. Designed for a crew of two, 35 passengers and 1,400 lb. of baggage and cargo, it is powered by 590-hp Alfa 120 MC-55 aluminum radial engines cruising speed of 135 mph at 7,000 ft. It is reported to have basic 1,800-mi. range with fuel consumption of 12 lb. per mi.

Span is 111 ft., length is 72 ft., height, 18 ft. 6 in., and wing area is 3,340 sq. ft. Of all-metal construction, the craft has four dotted tips. Cargo compartments are provided both fore and aft of the wing below the passenger compartment.



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## Need More Radio Service Facilities

Adaptive service facilities in the field for the large number of general plane pilots are in use on "radio trucks," John Reddie, president of Midwest Aeronautics Corp., advised Radio & Television Service Radio reported at the recent Aviation Education and Manufacturers Association summer meeting at Mechanics Field.

A survey by MIA indicated that 52 percent of all new general plane pilots had been equipped at the factory with radios. Reddie said. "Therefore radio manufacturers are currently engaged in establishment of many additional factory-approved service stations. Helicopters can be directly put in having service stations located so that a constant will be able to get the necessary service within ten hours flying range of any point in the country. Distributor members of ADMA are urged to accept these new service stations as a means of increasing their own popularity at the radio manufacturing clubs and to establish good radio service facilities.

VHF power steering facilities are being put in behind pilotless airplanes such as, Bellanca, and widespread use of both the HIGS be shared and VHF channels is predicted for at least five years. Many widespread use of CGA radio to aid private pilots is anticipated, with several firms already reported where the CGA has added private firms.

Reddie was recognized Chairman of the ADMA, Aircraft Radio Committee and announced that the committee was preparing CGA for a "better radio for the private pilot" as more and more radio manufacturers. The committee pointed out that the average power available for personal plane radio is 30 watts, finding use a short distance and yet the pilot is transmitting in competition with all the higher power radio transmitters and long distance used by large

commercial and cargo planes. Review of present CGA techniques, if accurate, to get the private pilot better understanding of radio is urged by ADMA.

Pragmatically, power steering plane sales from the personal plane power equipment was cited. Power two-way sets weighed 16 to 20 lb. as against an average of 11 to 12 lb. for power, and price increase around the \$150 to \$200 price average, which actually represents an important reduction when the availability of the power device is considered.

## Helicopter Models For Pilot Training

Helicopter model "ride" helicopters suitable for use in training helicopter pilots, are being developed in Buffalo as a side-line product of new Bell Aircraft Corp. employees. John E. Dumas, chief of model research, and William H. Barclay, assistant to the chief, are old-time model makers on the original staff of 15 which built the prototype of the present Bell Model 47B helicopter and became interested in model production in changes in the original helicopter were worked out through model use. Dumas has been building similar models for 15 years and holds several awards for flying models.

About two years ago the two men formed the firm of Dumas & Barclay, Inc., and set up a research workshop for flying helicopter models in Buffalo. They completed their first successful electric powered model in February. It is equipped with a full scale set of control surfaces, by means of which the student pilot can operate the flying model as without flight worth as he would by a full size helicopter and learn from the model the helicopter machine to correct combination of controls.

This electric powered model weighs 4½ lb. and has 34 in. square blades made of balsa and hard wood.

## Taylorcraft Employees Tailored to Claims

Approximately 600 former employees of Taylorcraft Aircraft Corp., an Alton, Ohio, are needed to get their claims on the bankruptcy receiver's liquidated assets for regular pay, bonuses and severance pay paid during the last month of the company's liquidation process against the firm. Taylorcraft, according to a recent ruling by Federal Referee Carl Finkelman at Cleveland.

Taylorcraft is approximately \$75,000 in regular pay plus bonuses of \$15,000 and severance pay of approximately \$10,000. Only the bonus claims of salesmen will be allowed, the receiver said. He indicated the bonus was structured as a contract between the sales and the company.

The Taylorcraft liquidation and sale of the manufacturing equipment was sold in bankruptcy proceedings to a group of former Taylorcraft distributors and dealers headed by G. G. Taylor, founder of Taylorcraft, who had been demanding the receiver for several years prior to the bankruptcy proceedings.

## 1,000 Planes Are Expected At Farmers' Midwest Meet

Frank Wack, director of the Showmen, Western T. Ryan, president of Ryan Aircraft Corp., and Don W. Smith, of Melroe, a private firm, will be present speaking at the Aug. 4 and 5 meeting of Flying Men of midwestern states at the University of Illinois school, Champaign-Urbana, Ill. Planes from Indiana, Michigan, Wisconsin, Iowa and Illinois are expected to fly in, with approximately 1,000 private planes in all reported at the airport. Exhibits of new agricultural equipment and new personal planes will be shown and demonstrations will include crop dusting in full helicopters by Arthur C. Galt, Goldenrod sport operator, Goldenrod model landing and flight demonstration in a Cessna 440 wing design and a flight of P-51 jet fighters from Emory Field, Va.

## New Bellanca Gear Operation Feature

An electrically actuated landing gear retraction mechanism is announced by Bellanca Aircraft Corp., a new aircraft design company, based on new Bellanca C-1000 30 four-place plane, at a price of \$1000 installed at the New Castle, Del. plant. The electric mechanism also may be installed as early as the 1946 or 1947 C-1000 aircraft at the hands of craftsmen and is available from the factory in kit form for field installation.

The mechanism will replace, except for emergency use, the manually-operated retraction system which is standard on the C-1000 30, consisting of a crank which actuates a linkage tube and a chain drive to "wind up" the shaft.

## Beech, Bellanca Hike Four-place Prices

Four-place airplane prices quoted upward, last week, with announcements that the Beechcraft Bonanza, and the Bellanca C-1000 30 were subject to increases effective July 14 and July 17, respectively.

Beech boosted the Bonanza tag to \$35,950, substantially a \$3,000 increase over the previous \$32,950 ticket, while Bellanca's C-1000 30 has a list price on Model A advanced from \$19,100 to \$20,100.

Effect of the increases will be noticed directly by the personal aircraft industry, were virtually every manufacturer is now between many rates and appreciations as to the number of customers he will lose in a price hike.

New Trend-A trend in industry, now reaching away from any hope of new aircraft, the personal aircraft market is gradually shifting to the secondary market as reported in the price hikes. A manufacturer with extensive financial backing and engineering know-how to face out a good four-place for \$10,000 or less, in quarters referred to make some money at that price, might become flying about a cheap airplane in the new year. Personal aircraft companies now producing new all-out four-place planes, Lancair, Cessna and Eclipse may take this chance when they put their new planes into the market.

Jack Cady, Beech vice-president and general manager, says that his company feared the \$37,950 price of the Bonanza was excessive because of the "very high degree of refinement" of the airplane, its complete interior and radio equipment, and not very careful testing process of all production airplanes, and also because of continuous improvements made on the airplane. New price for the Bonanza did not apply to the C-1000 30, which the company's firm customer agreement as of July 14. However this applies only to mechanics who had made the full \$1,000 firm order deposit calling for specific price and delivery date and not to customers who had made the preliminary \$100 refundable deposit for a priority contract.

First Report—Industry reports that Beech was going to increase the Bonanza price to approximately \$38,000 some time last fall or during the National Aircraft Show at Cleveland. At that time, a spokesman for the company advised that the company "had not increased" the price, but that there was no commitment which would prevent a future price increase.

H. L. Thompson, Bellanca vice-president, in announcing the C-1000 30 price hike says that all Bellanca distributors have been given notice of the increase since July 2. The increase applies progressively to the four other Bellanca models as well as to the basic Model A. It is understood that major part of the Bellanca increase will be used in lifting the distributor's percentage

from 20 percent to the 35 percent which is now fairly standard in the industry.

Other Competition—Among other major competition in the four-place plane field is the Navion, currently being marketed by North American Aviation, and plans to return to production in the West Coast from CGA plant at San Diego. Navion has indicated no change is contemplated in the \$27,200 firm price at the Navion, which would give it a considerable price advantage in competition with the Bonanza.

Largest active among the four-places is the Stearman Voyager 165, with a standard model selling for \$34,950 and a King Stinson Voyager model with removable, back seat in the light wings, which sells for \$38,000. The Voyager price has been in effect for about six months and there is no immediate indication of a change. Two major factors in the Voyager's leadership in shipments of planes in recent months have been its price, the lowest in the four-place field and the superior Stearman sales policy.

Only small four-places in the four-place field recently being marketed at the Fairchild 24, for which new lower price was announced in May, ranging from \$24,950 with standard equipment to \$27,950 for \$27,950 for an F-24 with a Stearman 175 hp engine, while previous prices ranged from \$24,950 to \$27,950. Price tag still remaining between the check engine, Fairchild and Stearman is probably an explanation for the slow increase of the F-24.

## Supplier Groups Rapidly Standard Parts & Equipment Corp.

Standard Parts & Equipment Corp., Ft. Worth, recently took over distribution of the former Glavin Aircraft War Assets surplus aircraft stock valued at more than \$5,800,000 in addition to the parts and equipment stock valued at more than \$1,000,000 thereby held by Standard.

Organized Jan. 1, 1946, the company has rapidly gained in size. Its present stock is valued at \$1,000,000. Its major products include Ray Pennington, president, George Manning, in chief general manager, Allyn Perry, secretary-treasurer, Don Dixon and Gene Meyer. Standard now holds 400,000 sq. ft. of inventory, includes maintenance and also handles distribution for War Assets Administration in hardware and its members. Sales volume of more than \$50,000 a month is reported for the company's first six months of operation. The company plans to add other commercial products to supplement its surplus supply program and develop a balanced sales program.

## Airport Short Course

A four-day short course for airport assistants and clerks will be conducted at the University of Southern California College of Aeronautics, at Burbank Field, Santa Monica, Calif. from Aug. 15 to 19. Domestic rates are being provided at the airport campus for registration, and plane facilities will be provided at the field.



CUB HAVEN CAR RENTALS

Four domestic Cessna rates, not of truck-type, are available for pilot pilots at Cub Haven Airport, Lake Haven, Fla., at \$2.40 for the Cessna 440, \$2.00 for the Cessna 440, \$1.50 for the Cessna 440, and \$1.00 for the Cessna 440. A \$1.00 fee for 12 to 15 in use a week, while for 16 to 20 in use a week \$1.50 plus mileage charge. Larger standard cars cost at \$1.00 a day. Rates include insurance charges.



3000th NOTAGER DELIVERED

Col. Jack Lyndon, owner, operator of Flying I. Daily Kaseki for private firm at Buckle, Texas, is the 3000th delivery of the Notager, a Flying Notager, was delivered by William Kaseki, Notager private manager, left, and Lee Kaseki, Jr., Worth, Texas, Notager distributor.

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## BRIEFING FOR DEALERS AND DISTRIBUTORS

**ENGINE OVERHAUL CENTER PLANNED**—Negotiations are being completed for substantial all of a new engine overhaul line for lightplane engines, operating under the name of General Maintenance Engineering Corp. and headed by William C. Chaffin, previously associated with Pratt & Whitney, Wright Aeronautical and Wiggins Airways as engine service work. The new business will be located at a central New Jersey airport and will provide service for plane owners and fixed base operations in the northeastern region. Chaffin hopes to begin operations by Jan. 1, and expects to operate a trucking delivery service through the area to serve, with an engine exchange program including his own company's overhaul and factory overhaul engines. AMEC will set up a new overhaul system using advanced production tooling which Chaffin is designing, and he anticipates his company will be able to reduce engine overhaul costs approximately \$100 below present costs.

**SKY RANCH DEVELOPMENT**—Construction is now underway on a runway for a new fly-in ranch for flying vacations at Hot Springs National Park, Ark. Vance W. Brown, owner of the Jack Torrey Court Hotel at Hot Springs, also plans to operate a GI flight training school at his new field. Main runway now is 3,000 ft. and eventually will be extended to 5,000 ft. so that it will accommodate any size plane. Two other runways will be 3,000 and 2,500 ft. A dirt path, land will slope the flag field, with recreational facilities including an artificial lake stocked with trout fish, swimming, riding, and boating. A tugboat boat will also be established on nearby Lake Hamilton, Bryant and. The amenities a large ice cream business will develop from surrounding cities such as New Orleans, Houston, Dallas, Ft. Worth, Oklahoma City, Tulsa, St. Louis, Memphis and Birmingham, all of which are now two and a half to three and a half hours' drive from the new project.

**WELSH SHOPPING CENTER**—Another new project which will add to the utility of the personal plane and eventually the helicopter at the Hampton Village Shopping Center which opened in St. Louis recently. Construction of a large airfield landing facility was scheduled to be demonstrated by St. Louis University, which has been authorized by the city to fly in a Bell helicopter from its own laws to landing in the shopping center, do her shopping, and return home via helicopter. The helicopter landing area will now be supported by a landing strip for conventional personal planes, being built as an integral part of the 15th development, which will, the management expects, everything from sports to autos.

**RADIO TEST—Bentley** The World Flight of Time and Time in two Paces Super Circuit, will prove publicly the most graceful service that Bentley Flightwrights might represent has yet had. Concluded report of radio communications and navigation equipment supplied by Radio in 257 ft. It includes a swept and broadband receiver with crystal controlled frequency bandpass of 40 MHz and 20 MHz. Also included is a radio receiver, a medium frequency transmitter, and the new Radio VHF transmitter, which will be used for emergency communications with control towers and aviation stations, and can be used for communications making possible use of GCA radio landing aids and communications with VFR A and Navy stations in all parts of the world. Standard airplane radios replace power for all the equipment.

**CALIFORNIA RECOMMENDATION ACCEPTED**—Three days after meeting an unanimous endorsement by 90 percent of the members of the California Aviation Trades Association, Gov. Earl Warren signed the bill, which provides for a five-year moratorium on the use of state resources devoted to resolve a \$12,000 annual debt. Bill permits companies to adopt temporary regulations but they expire unless they are enacted as legislation by the last session of the state legislature. The clause, an exemption in state vehicle legislation, is reported to give aviation interests in California opportunity to conduct effectively limited regulation while still and be passed by the legislature and satisfy them through legislative action.

**OSCAR ZONING AFFECTS AIRPORTS**—Nearly every airport built in Ohio from now on will probably be affected by an act recently passed by the General Assembly and signed by Gov. James I. Rhodes, reducing county and township government bodies to regulate by the use of local in their respective territories. The law provides that if 60 percent of the population of either county or township may petition for establishment of a zoning commission, or the board of county commissioners or board of township trustees may establish such a commission without such petition. The zoning will not directly affect municipalities within the county or township. However, in the event a municipality should wish to build an airport outside its limits, it frequently happens, presumably the would be subject to jurisdiction of the county zoning commission.

ALEXANDER MAREL

# AIR TRANSPORT

## Airlines Vie for Increased Share Of Record Airmail Appropriation

Post Office requesting \$104,295,000 for payments to domestic and overseas carriers during fiscal 1948, up 66 percent over fiscal 1947.

By CHARLES ADAMS

A less air transport industry, weakened by the deficit that which accompanied new passenger load factors during the past six months, is looking ahead to a record for the second \$104,295,000 record appropriation requested by the Post Office Department for fiscal 1948.

At first glance, the whopping 66 percent increase in aid funds in fiscal 1948 over fiscal 1947 appears to make ample provision for the additional losses in rates now being requested by almost all of the certificated carriers. That carrier requests show that most of the additional money will be paid for domestic and overseas carriers for mail transportation on routes which were inactive during part or all of fiscal 1947.

Domestic Overhaul—Domestic of the \$104,295,000 asked for the fiscal year which began Jan. 1, 1948, shows \$10,000,000 less than the amount of \$11,297,000 for domestic mail transportation. The proposed fiscal 1948 figures showed appropriation is almost double the \$10,000,000 requested for the fiscal 1947, and the domestic allotment for fiscal 1947 was \$17,291,000, above the \$14,800,000 appropriated during the past fiscal year.

Approximately two-fifths of the \$11,297,000 domestic mail appropriation has been allocated tentatively for Lockheed on the basis of a full route network of between 25,000 and 30,000 route miles. Bureau developments have indicated that considerably less than 15,000 miles of route miles will actually be operating during most of fiscal 1948, thereby leaving the possibility that some of these funds can be used to meet the increased needs of the domestic airlines.

International Airmail—Of the 11 American airlines carriers which operated on a new outside mail pay basis of 45 or 60 cents a mile during early calendar 1946, all but three now have applications for increased rates pending pending before CAB.

Most recent petitions for airdel and pay have come from National Airlines, which has requested a sharp drop in operating rates during recent months as its total losses climbed from \$772 gain in March to 45-60 percent in June, after showing an operating profit of about \$486,000 during the first four months of this year, NAL

collected an operating loss of \$45,061 in May and has told CAB that considerably larger losses are indicated for June.

Wagon Wheels—The carrier admitted that part of its severe decline represented a new and unusual trend. But it knows readily rising costs and pointed to pending wage negotiations with employee groups as reasons why it will create a loss scale rate in coming month.

Domestic Airlines in the immediately group which have applications for mail pay is coming pending airlines, besides National, United, TWA, Eastern, South, Western, Chicago & Southern, and Capital (PCA). Daily America, Northwest and Delta but are filed for additional compensation by July 21.

CAB Acts—For all previous purposes, the 45-cent rate normally paid has been reduced by about CAB action on the CAB rate petition of PCA, Western and C&S in these cases, the Board authorized new rates and pay increases up to seven fold for the industry for its rising loss scale rate.

Use of the "maximum capacity factor," which placed a floor under the airlines, mail load, permitted payment for volume in excess of that actually carried. Thus, PCA



PRIVATE TAXI

This 1946 Buick Sedan which weighs 180 lbs. is a gift of another a standard equipment. It has a 1946 Buick Sedan which weighs 180 lbs. is a gift of another a standard equipment. It has a 1946 Buick Sedan which weighs 180 lbs. is a gift of another a standard equipment.

while still technically on a 60 cents a mile scale basis, is expected to receive payments of \$4 a mile during calendar 1947. National has asked CAB for a maximum capacity factor for its rising loss scale rate. Federal Rate—Meanwhile, the federal rate authorized by CABs last action that month on Pioneer Air Lines' and said "The carrier's first order was given 51 cents a mile scale from Aug. 1, 1945, below a

## Mail and Passenger Statistical Comparison Between Largest Domestic Carriers

(Seven carriers—1946 to 1946 schedule)

Carrier	Total Miles	Operating Miles	Revenue per Plane per Month	Mail Pay per Ten Mile	Passenger Revenue
Eastern	\$44,444,000	20,311	\$3,355	\$4.45	\$1,105,000
United	\$2,125,000	12,391	\$1,341	\$4.5	\$26,750,000
TWA	\$2,074,000	15,200	\$1,045	\$4.5	\$11,970,000
Eastern	\$1,630,000	10,991	\$1,045	\$4.5	\$11,970,000
Northwest	\$1,544,000	15,111	\$1,341	\$4.5	\$11,970,000
Southwest	\$1,517,000	14,541	\$1,371	\$4.5	\$11,970,000
Western	\$1,498,000	11,151	\$1,371	\$4.5	\$11,970,000
Delta	\$1,498,000	14,121	\$1,371	\$4.5	\$11,970,000
PCA	\$1,498,000	7,751	\$1,371	\$4.5	\$11,970,000
C&S	\$1,498,000	11,751	\$1,371	\$4.5	\$11,970,000
National	\$2,125,000	11,751	\$1,371	\$4.5	\$11,970,000
Totals	\$116,870,000				\$77,775,000

(Data prepared by Post Office)

# Martin Memo

Published by The Glenn L. Martin Company  
Baltimore 3, Maryland



**On Landing Airline Seas...** Here, the almost modern Martin 3-0-2 airliner is shown in flight during CAA certification tests. Sperry Martin heavy losses will soon be a familiar sight at airports the world over when they go into operation for those great airlines and cargo carriers: Capital (PCA), Eastern, Chicago & Southern, United, Northwest, Delta, Panagra, Convair del Sur (Boeing), Aerolineas (Argentine), Nacional (Chile), Mascau, Flying Tiger—Air Route Cargo. D. S. Willis

**Going Up... 235 Miles...** Rectitude is one of the most advanced research projects of the Martin Company. New motor construction is the keynote, first of two experimental models, 45 feet long, capable of flights to 235 miles above the earth's surface. These huge rockets, being built by Martin for the Navy, are the first all-American long-range missiles of supersonic speeds.

**As a Military Transport...** The Martin 3-0-2 offers many advantages. It cruises 100 m.p.h. faster than present twin-engine transports. It can carry 50 completely equipped troops or 15,000 pounds of cargo. Built-in features include new thermal insulating equipment... efficient waste systems... large cargo loading gear... large cargo doors.

**35,000 Flying Hours...** During stress tests, the Martin 3-0-2 was subjected to wear-testing and flying equivalent to 25,000 hours of flying or 10 years of average service. Results of these rigorous tests are further proof of the superiority of the Martin 3-0-2's advanced design and construction.

**Looking for Cold Weather...** To thoroughly test a new transport, standard equipment on all Martin transports, a Martin 3-0-2 was sent to Minnesota. Flying in the cold layers of air north of Minneapolis, the engineers, and CAA representatives, were able to choose varying types of icing conditions for their experiments. The operation which involves passing barrels are through the wing and tail assembly proved successful... the experiments were facilitated by aviation experts as a big step forward in all-weather flying.

**"A Real Boy" Here's Why...** Martin has orders for more new transports than any other manufacturer. Through quantity production Martin is able to spread the cost of Martin transports over a larger number of planes, giving purchasers these great new airplanes at low cost.



**Low-Cost Maintenance...** These are not weaknesses in the Martin 3-0-2. They are a few of the numerous advantages which provide easy access to the 3-0-2's electrical and hydraulic systems. These built-in features mean low maintenance and servicing costs. The openings shown above are in the bottom of the fuselage.

**Increased Profits for Airlines...** The new twin-engine Martin 3-0-2 carries 30 to 40 passengers (or 15,000 pounds of airfreight on the cargo version) at speeds 100 m.p.h. faster than the planes they replace. But more important is the fact that this modern transport needs only 18 pitot sensors (by CAA formula) to break over. Thus, airline profits with the Martin 3-0-2 can be as high as 50% of the total passengers payload. That's one of the big reasons 15 leading airlines have ordered 34 new transports.



**Newest Jet Bomber...** The high speed, long-range X-46 was built by Martin for the Army Air Force. Powered by jet engines, it is the largest multi-engine conventional type plane yet constructed. The X-46 also proves a new bicycle type landing gear developed by Martin for high-speed aircraft.



## Mail Pay Scale

Wide diffusion in mail pay received from the Post Office by large and small airlines here has largely obscured by the fact that the former are paid on a ton-mile basis and the latter on a plane-mile basis. Actually, some airlines operating new-type aircraft on which annual traffic is just beginning to be developed are being paid 100 times as much as the larger airlines for carrying one ton of mail one mile.

The "Big Five" airlines, American, United, TWA and Eastern, receive 45 cents a ton-mile. Midway, Chicago & Southern, Delta, National, Northwest, PCA and Western were paid 60 cents a ton-mile in 1945. Payments in scheduled carrier form were: Capital, equivalent of \$1.39 a ton-mile; Continental, \$1.85; Mid-Continent, \$6.55; and Northwest, \$6.65. First-year 1947 showed all American, American Express, \$20 a ton-mile on its padding route, and Eastern being paid as follows: Empire, \$25; Florida, \$31; Monarch, \$33; Southern, \$13, and West Coast, \$10.

rates increased to 40¢ in July, 1946, and 60¢ a plane-mile from Sept. 1, 1946, to May 11, 1947. These rates will enable Pioneer to show a 7 percent profit on its investment.

For the period after June 1, 1947, CAB has decided to adopt a "sliding scale" rate for the "small" airlines. The formula provides automatic mail pay of 45 cents a plane-mile when the carrier's passenger load factor is 75 percent or lower, and mail compensation automatically drops one-half cent a mile for each 1 percent increase in load factor.

## Canada States Policy

### On Air Service Licenses

Canadian commercial air services, whether scheduled, unscheduled or charter, must be operated primarily as a commercial air service and not as auxiliary enterprises of a company or some other business. This ruling was made recently by the Canadian Air Transport Board in rejecting applications by mining and fishery companies for licenses to operate commercial air services in connection with their own business.

CATB and public air service would not be if other activity of the companies is of great importance. The board ruled that first-class would then be an operation and a separate unit could be set up as a subsidiary service. Whether the air service would be conducted for a group of companies owned by or related to one held by company. A number of such licenses have been issued by CATB to air services operating under contract.

## Western Boosts Spring Earnings

### Economies Important Factor in carrier's comeback after fight for survival last winter.

Western Air Lines, which last winter had its back to the wall in a fight for survival, has turned in a net profit for the second successive month as a result of its assumed and kept, higher passenger fares and traffic, and its aggressive cost reduction program.

T. G. Donahoe, W.A.L. president, reported consolidated net income of \$141,532 in May, compared with a net loss of \$142,550 for the same month last year. The carrier first moved into the black during April, when it earned \$24,616 after suffering a first quarter consolidated net loss of \$90,000.

► **Revenue:** W.A.L.'s total revenue for May, 1947, was \$1,258,515, after operating expenses were \$1,117,132. During the same month last year, revenue was \$1,077,173 and expenses \$1,058,501. Revenue passenger mileage in May was up 30 percent over April and 20 percent above May, 1946.

While recovery of passenger revenues after the winter slump and increased mail pay have been important factors in Western's comeback, the company's constant expense reduction has been a major factor without the cost-cutting program. Here's what Western has done lately to save its costs:

- **A 24 Percent Cut in Personnel** has been effected since Jan. 1, with cutbacks widespread through flight, advertising, publicity, treasury, news and engineering, and passenger service departments. Staff savings may be expected to continue, but at a much slower rate.
- **One Stridley DC-4** has been sold to American National Airways.
- **Marketplace:** Ryan Flight bought an acquisition of purchasing 20 Convair 440 transports have been sold heavily following W.A.L.'s outlook of the Convair order to 30 units.

► **Ticket and Administration Offices** have been consolidated into single quarters in cities where more than one office previously had been maintained.

For the future, Western has programmed additional economies that will be made as revenue produces and it has no plan to pull out the situation of all divisions or routes.

► **Four West American**—While fast transports have not been completed, it is believed that a new service will be operated with American Airlines for considerable ton of hotel office and ground handling facilities.

Although new airlines have, in their early development, shared facilities of already established carriers, the industry said one

has been far completely autonomous post stage success and airport ground crew.

► **New Traveler—Western** and AA will establish a new service when the west coast coast season by both, they share the cost of passenger ticket efforts, airport passenger facilities and airport handling. In most instances the work will be handled by Western personnel, and American will be held for its share of costs. In addition, a joint program, purchased of the two airlines will remove everything uniform only as to establish the effect of nationality of service.

Particular interest will attend the consolidation of airport ground handling in view of the transport industry's extended decline over ground handling costs. Time wasted by ground crews, who frequently cannot be shifted to other productive work between airplane arrivals and departures, has been extensive. Consolidated ground handling plans often have been proposed and are regularly rejected by carrier side have an added speed, preserving the identity of their operations. Both is easy approval and easy proposed.

► **Range Under**—Under the Western Airlines contract and plan, ramp equipment will be shared, and a single ground crew will handle the two airlines' work on planes of each carrier.

Because of the lucrative state of the plane, until now, neither carrier desired to share it. As a result, the preliminary ground crew was in a strong move in the west coast that American was seeking additional purchase of heavily damaged W.A.L.'s cost carrier from Los Angeles to San Francisco and as much in Seattle. W.A.L. spokesman said they are skeptical that the revenue ever had been enough to cover the cost.

However, Western would like to sell its leased Air Lines operations, and after CAB hands down a decision on the application of United Air Lines to purchase Route 68, Los Angeles Division, bids for inland ports will be considered.

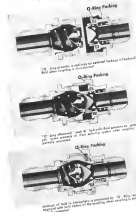
## NWA Joins Other Lines in Filling Cargo Tariff

Railway Transport Agency's attempt to raise the freight field through Northwest Airlines' added capacity, reported April 1946, apparently has failed. On top of recent reduction by CAB public control and a local economy that the management is disappointed. Northwest initially paid 15¢ additional carrier which, however, did not offset rate rate itself through the Air Corps law.

Within participating in the industry tariff bodies Northwest an American, Pacific, United, and Northwest, Canadian, Delta, Eastern, Island, Mid-Continent, Southern, National, Northwest, PCA, Pioneer, Southwest, TWA, United and Western. The 15 percent reduction in freight rates reflected in the tariff will be effective Aug. 1 of CAB approval.

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## Investigator Reports On UAL Accident

The pilot of the United Air Lines DC-4 which crashed at the end of a LaGuardia Field runway during takeoff on May 19 has been accused of "flying piggyback" in making those abrupt descents prior to the crash.

In an affidavit report submitted to the Senate Commerce Subcommittee on Aviation by its special investigator, Cui Dolan, the pilot's questionable descents were listed as 1 his weather station is estimating the speed of an approaching storm and is considering the various parts of wind when possible a storm, 2 his choice of runway, 3 his attempt to stop after towing into the middle of the runway. Dolan and that had the pilot screwed his decision (as was his guess) in any way of the time it crashed, the accident probably would have been avoided.

► **First Report.** The LaGuardia Field accident report is the first to be submitted to the Senate Subcommittee by its investigator who was operating only last month following the United and Eastern crashes during the Memorial Day weekend. Acting independently of CAA's Safety Bureau Dolan will make reports directly to the Subcommittee on the Capitol Hill.

ICAW DC-4 crash at LaGuardia, N.Y., and the accident involving a Channel Buick Air Transport DC-3 in Florida two weeks ago.

Dolan said that with the UAL plane, holding at over 70 mph when two-thirds of the way down the LaGuardia runway it could not possibly have been stopped on the remainder of the stop. "It was at the pilot had 480 additional horsepower, and his flap setting was only 15 mph in could have increased the flap setting beyond his throttle wide and taken off," the report declared. It pointed out that the taking off of a plane which has previously reached its takeoff speed—only about the weight of the craft on the wings rather than as the wheels—would naturally be difficult.

► **Little Margin of Safety.** "Chance of the storm," says with reference to his company's last specifications, give the pilot very little margin of safety, the formula indicating that with a 60,000 lb. load he required 19 mph headwinds. At takeoff time, the winging and shifting winds per cent the storm were blowing directly on the runway at 20 mph. With a change in wind direction, the component of the wind blew at the runway dropped to 15 mph, and under this condition the plane was overloaded during the takeoff attempt.

In recommending action to prevent the crash, Dolan said the Senate Subcommittee that lowered descents should be in extra control on the ground. "This would require a higher altitude of departure than a new rule," the investigator said.

► **Standardization sought.** "Lead short procedures, which vary with the airline should be standardized and uniform for a given type of plane, with CAA, application and specifying them. At present, one operator uses a graph, one a table, others charts. Still others use into conversion variables which cause errors due to mis- of which tends toward different conclusions. Authority of traffic control towers to make lead decisions as runway, weather, or other matters as the authority of safety data should be expanded," Dolan concluded.

► **RAE, Whiting-McIntyre,** the second phase of the CAA hearing on the Eastern Air Lines accident at Remonding, Md., May 10, has been completed at New York. It is expected to testimony that pilot had made 18 reports of excessive vibration as the result of DC-4 between May 24 and Apr. 22, Eastern added and revealed positions to make a complete report on the plane's history during the period to show that the entire action had been taken. The view was that in the investigation, and while reports handled the development, CAA investigators said the difficulty was rather complex, not particularly dangerous, and probable not on bearing on the accident.

## New Reservations Plan Instituted by Braniff

Braniff Airlines has given Mid-Continent Airlines and Continental Air Lines full authority to make and immediately confirm seat reservations on any flight between the 30 cities on Braniff's domestic system.

In the past, confirmation for service on connecting space on another carrier had to be requested by wire from that carrier's home office, and frequently the request had to be relayed to the city closest to the desired space.



BRANIFF CARRIES CESSNA TO PANAMA

Part of 10,000 lb. of cargo loaded from Dallas to the Pan Am C-54 plane in a recent cargo flight by Braniff Airways via the single-engine Cessna 180 from Wichita, Kan. The loaded plane, weighing 12,118 lb., was assembled in Dallas.

## EAL, American Flight Increased Competition

American Airlines and Eastern Air Lines have leveled their biggest gun against the competition as the heavily loaded New York-Washington route, giving special attention to Atlantic Airlines' proposed 30 seats a mile "big coach" service.

For his claims of New York-Washington traffic would go for around crossing a 5 cents a mile wide, critical EAL says a mile a mile. American told CAA in an agreement in the Middle Atlantic area case Eastern pointed out that Atlantic's 15 percent DC-4 would be competing with CAA's 100 seats, Eastern 100, and Continental 100. Both Eastern and Eastern doubted Atlantic's business plan operators (see bottom), no less seats, and I could count down to achieving the common goal President J. J. Sweeney predicted for it.

New routing services—Al, American, Braniff, Chicago & Southern, National, Northeast, PCA, TWA, United and Continental—have applied for New York-Washington service as the Middle Atlantic area case. CAA and Atlantic were more inclined to fly the route by the CAA's 100 seats, and Delta Air Lines has been invited by commenters for the same task.

## Aerial Advertising

General Petroleum Corp. has taken the East Sea Panavia area one of advertising served by the two major blimps and Douglas's Douglas, New York. The blimp, "Flyer No. 1," is the largest in blimping lights on the side of the blimp—there's no craft coming over West Coast cities Douglas says has lighted blimping operation from Lakeland, N.J., to cover the New York area.







## Politics Again

Presumably because Elliott Roosevelt has potent political enemies, some of whom support election campaigns of men on Capitol Hill, we are going to see another "investigation" of an aircraft manufacturer.

Sen. Brewster seeks to subpoena documents of the White House in connection with orders given by the government to Howard Hughes. The case Brewster's keen insight into publicly brought him to summon a number of Hollywood glamour girls to his Washington inquiry.

Washington observers think the proceedings which open next month will be one of the cheapest spectacles Capitol Hill has ever pulled.

It has never been any secret in Washington that the order the government gave for the giant cargo-carrying flying boat was President Roosevelt's idea. Neither of the air services, according to reliable reports at the time, was slightly interested in a giant plywood plane. Both Army and Navy fought shy of it vigorously. So did the rest of the aircraft industry. So the President "inked" RFC to back the project.

## Two Air Policy Boards

The aircraft industry, which for months has fought for establishment of an air policy board along the lines of the old Moore group, suddenly finds it has a commission named by the President and promise of another to be created by Congress.

The situation developed so rapidly last week that many industry observers are breathless, unable to venture a guess as to whether it's all good or bad. No one doubts that there is a sizeable chunk of dynamite in the machinery. The fervent hope is that we can prevent conflagration. The dynamite enters the picture at the beginning. It's the joyride that some Capitol Hill people have for the President's group. We shall have two groups working on the same subject at the same time.

On the President's commission are men with backgrounds of general business rather than commercial aviation. The congressional board will utilize their legislative and political experience. Few are likely to have outstanding business attributes, but the industry hopes the appointment will be noted for their statesmanship and their awareness of world affairs.

Sources of information will be the same for both commissions. It is in the interpretation of that information that the disagreements can be expected.

There have been too many air policy commissions,

The Government, meeting the White House, was determined to see the big ship through. Howard Hughes, never a circumstantial manufacturer, but always interested in accelerated research, saw an opportunity to experiment with the loaded plywood process which he owned. As in his other research projects, he is reported to have poured much of his own money into the big flying boat.

As for Hughes' failure to deliver certain experimental military aircraft, there was nothing unique about that in our war experience. The Army and Navy insisted they were short of test aircraft which were abandoned.

We are not defending Howard Hughes or any other manufacturer, nor do we think war contractors should be immune from Congressional investigations. But when we see an "inquiry" start out like this one, with all the signs of a smear campaign planned to monopolize the tabloids with insinuation of beautiful Hollywood girls, gals, gals, we think Capitol Hill is stepping very low indeed. We don't believe either fact or justice are the objectives of this spectacle.

committees and boards already. Their usefulness firstings have been picked away in store-front and libraries with no more attention than inaccurate publicity. Now that the President of the United States and the Congress have suddenly passed the way for a special group to report to each, the possibility of an adequate national air policy are brightened appreciably.

The aircraft industry and the nation's airlines will cooperate completely with both commissions. Information will be available to the investigation at a moment's notice. Every phase of commercial aviation will stand ready to be of service to the President and Congress.

Key to success, however, lies in the men who are appointed to these commissions. Will they be big enough to put the interest of their country above politics and petty prejudices? Will they be able to cooperate, or will they sink to headline hunting? We have every confidence in the President's appointees. These have been mentioned and they are excellent selections.

But air policy depends in large measure on Congress for implementation. It is also in Congress that the agreements are still to be made. If they are shrewd, the success of both commissions seems assured. If they are politicians in power and the country are still bogged down in confusion.

ROBERT H. WOOD

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